

On p -Schreier varieties of semimodules

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Abstract

In this article, we consider categories of all semimodules over semirings which are p -Schreier varieties, i.e., varieties whose projective algebras are all free. Among other results, we show that over a division semiring R all semimodules are projective iff R is a division ring, prove that categories of all semimodules over proper additively π -regular semirings are not p -Schreier varieties (in particular, this result solves Problem 1 of Katsov [8]), as well as prove that categories of all semimodules over cancellative division semirings are, in contrast, p -Schreier varieties. © Taylor & Francis Group, LLC.

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Keywords

(p)-Schreier varieties, Additively p -regular semirings, Cancellative semirings, Free and projective semimodules